

Figure S1: Cost structure influences when migration evolves. Lines denote the boundary between full-migration and full-residency for 3 cases: when the survival and fecundity costs of having both parasites is (i) superadditive, (ii) additive, or (iii) subadditive of the costs of each single parasite. Parameter values and colors are the same as Fig. 3, but with different values of  $\phi_3$  and  $\sigma_{3R}$ , as determined by the cost structures.

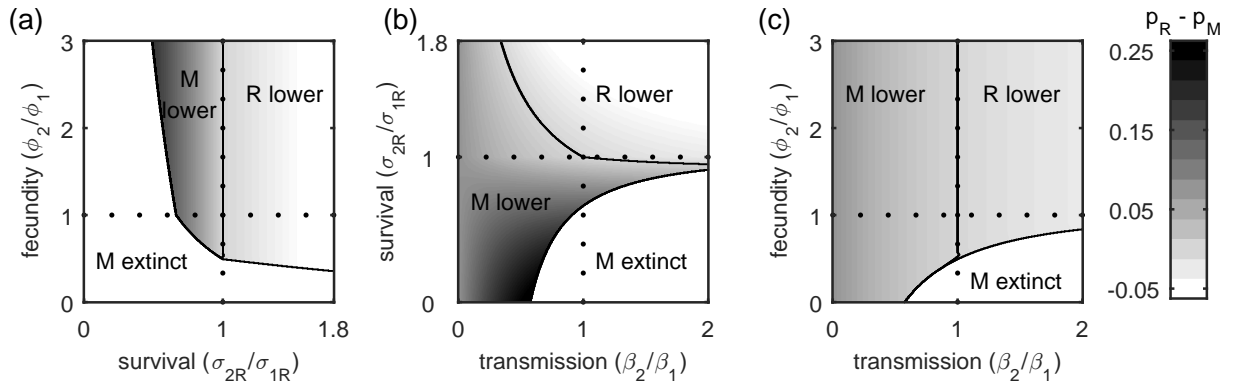


Figure S2: Relative infection prevalence in migrants versus residents, with no cost to migrating. Shown are cases where migrants have lower infection prevalence (dark grey), residents have lower infection prevalence (light grey), and where migrants go extinct and thus residents have lower prevalence by default (white). Parameter values are the same as Fig. 2, except there is no survival cost to migration, i.e.,  $\sigma_{SM} = \sigma_{SR}$ ,  $\sigma_{1M} = \sigma_{1R}$ ,  $\sigma_{2M} = \sigma_{2R}$  and  $\sigma_{3M} = \sigma_{3R}$ .